



Cave Salamander

What is an amphibian?

- Amphibians in Tennessee include salamanders and frogs. At Radnor Lake, our largest is the American Bullfrog (*Rana catesbeiana*). Bullfrogs can be as large as a grapefruit!
- Amphibian means “two-lived” because they live both on land and in water. At Radnor Lake, they rely on the many fishless ponds and streams for a place to live, mate, and lay their eggs.
- Amphibians are cold-blooded— their body temperature is the same as the environment around them. To combat freezing temperatures, some produce natural antifreeze to keep their organs from freezing.
- Most amphibians flip their long, sticky tongues to capture their prey.
- Amphibians have evolved various defense mechanisms such as slippery skin to make it difficult for a predator to keep a good grasp. Some use camouflage to hide, while others use brightly colored skin to warn predators of unpleasant or dangerous prey. They can also be sticky or toxic and unpalatable to a potential predator. More than 200 toxins have been found in only a small sample of the world’s amphibians.
- During certain life stages, amphibians can breathe through their skin! Their skin is water permeable meaning that water and particles in the water can pass into their bodies. This makes them very susceptible to pollution and changes in their environment. Keeping Radnor Lake healthy helps ensure that its amphibian population is healthy.

Why are amphibians important?

- Amphibians are the primary predator of insects in most environments. In turn, they are a major source of food for reptiles, birds, fish, and mammals.
- Scientists worldwide study them to find treatments for human illnesses. Promising research includes drugs to treat Alzheimer’s disease and for pain relief.
- Frogs and salamanders are extremely important bio-indicators because their skin is permeable to pollutants and they are subject to biomagnifications—the effects of chemical contamination in the food web. Studying their health in a specific area helps show how healthy the environment is in that habitat.
- Unfortunately, amphibian numbers are declining worldwide. There have been no official studies on amphibian health inside Radnor Lake State Natural Area, but there have been indications of pollution inside the park and habitat loss in the surrounding community.
- Educating people about amphibians helps to remove the stigma they may hold as being gross or ugly and supports efforts to protect them and the health of the park.



Spring Peeper

Check www.radnorlake.org or stop by the Visitor Center to find out more about our environmental programs and Radnor’s amphibians.



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www.radnorlake.org

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Radnor Lake

AMPHIBIANS



RADNOR LAKE
State Natural Area



Salamanders

- Salamanders have moist, porous skin, lay jelly-like eggs, and have a long tail. Unlike lizards, they do not have scales, claws, and cannot survive far from water.
- Salamanders are nocturnal, coming out at night to hunt for invertebrates. In some habitats, they are the most abundant creatures in the forest.
- In many forest habitats, salamanders are the main controller of insect populations. They are one of the most important pieces of the forest floor ecosystem.
- The southeastern United States has the greatest diversity of salamanders in the world.
- Most salamanders begin life in an aquatic larval stage and then move to a terrestrial adult stage. Exceptions are the Mudpuppy and Hellbender which live completely in water and the Zigzag and Slimy Salamander which live completely on land.



Tiger Salamander



Red Salamander



Northern Redback Salamander



Eastern Newt

- Salamanders do not have the defense of fracture zones in their tails as some lizards do, but are able to regenerate entire limbs.
- Scientists use salamanders to monitor for problems in the environment. They are important biological indicators because of their sensitivity to the environment due to their porous skin. They are also a valuable tool in the sciences of evolution, ecology, animal behavior, physiology, genetics, and medicine.
- The major dangers to salamanders besides their natural predators are the human borne actions of timber harvesting, agriculture, wetland drainage, urbanization, and the introduction of exotic predators. At Radnor Lake, the main problems are pollution and siltation from the uncontrolled watersheds outside of the park's boundary and habitat loss in the surrounding community.

Frogs & Toads

- Tennessee has 21 native species of frogs and toads.
- Frogs are tailless vertebrates that have moist skin with no hair, feathers, or scales. The scientific name of anuran means "tail-less".
- Frogs have smooth, moist skin with big hind legs while toads (a special type of frog) have rough, dry skin with more stubby hind legs.
- Frog eggs laid in the water hatch into tadpoles and then as adults move onto land and change their shape. This is called metamorphosis.
- Contrary to popular stories, frogs cannot give you warts, but the secretions of some frogs may cause burning, irritation, or allergies.
- Frogs communicate by voice. Males call to attract females during mating season. They sing mostly at night, which means most people only hear frog songs as sound effects in motion pictures. Frogs were the first animals on land with vocal chords.
- After mating, the female frog lays hundreds to thousands of jelly-coated eggs in the water.
- Although frogs are known as jumpers, they also travel by climbing, walking, swimming, and digging. Some frogs can leap 36 times their body length.
- Most frogs eat insects, but Bullfrogs can eat fish, turtles, frogs, small snakes, and birds.



Eastern Spadefoot



American Toad



Southern Leopard Frog



American Bullfrog



Fowler's Toad